

evident to one skilled in the art that the application of rotational force to an object having a certain rotational velocity will have an effect upon (or control) the object's rotational velocity (e.g., applying a braking force to a car's wheels results in the rotational velocity of those wheels to be reduced).

For these reasons, Applicant's assert that the claims 1 – 13, as written, are not unclear and confusing as torque is commonly applied to rotating objects to control the velocity or speed of that rotation and therefore claims 1 – 13 are in a condition suitable for patentability over the Examiner's §112, 2<sup>nd</sup> paragraph rejection.

### §102(e) Rejections

The Examiner has rejected claims 1 - 7 under § 102 (e) as being unpatentable over U.S. Patent No. 6,054,776 of Sumi ("Sumi"). Particularly, the Examiner asserts that Sumi discloses an "engine (1) having an output shaft; a motor/generator (2) coupled ... to the engine (1) which produces a reaction torque; [and] a clutch assembly (36) coupled to the generator (2) to augment the reaction torque to control the engine speed."

The Applicant's undersigned attorney respectfully asserts that independent claim 1 and claims 2 – 7 which depend from it are not anticipated by Sumi and are therefore patentable over Sumi. Independent claim 1 of the pending Application includes distinct and important limitations which are not disclosed or suggested by Sumi. Independent claim 1 includes the limitations that the clutch assembly is coupled to the generator and that this clutch assembly augments the torque produced by the generator. In essence, the clutch assembly acts as a brake to slow down the rotational speed of generator by applying additional torque to the braking torque originally supplied by the generator alone (i.e., "augmenting" the reaction torque).

Sumi, however, discloses that the clutch assembly 36 **is coupled to the engine 1** as well as to the generator 2. In fact, the clutch is disposed **between** the engine and the generator. The

clutch 36 does not provide additional braking torque to reduce generator/engine rotational velocity, instead it acts as a means to allow the generator to be coupled directly to the engine (i.e., circumventing the usual gear train 35 coupling). By directly coupling the generator to the engine, the clutch of Sumi acts to cause the generator to rotate at the same speed as the engine. This occurs when a sensor detects that the **generator** is rotating too fast. (See Sumi at column 9, lines 27 – 41). The clutch of Sumi does not provide additional torque to control the speed of the engine, but instead acts to directly couple the generator to the engine and it is the generator **alone** which exerts more torque due to a new duty control signal. (See Sumi at column 9, lines 41 – 46). One advantage of the present invention is that it acts to reduce the dependence upon generating more and more torque from the generator alone (i.e., using larger generators) and the novel addition of a clutch assembly that provides the needed additional torque when necessary. (See pending Application, page 2, lines 21 – 26 through page 3, line 1).

For these reasons, it is asserted that claims 1 – 7 are not anticipated by Sumi and that these claims are therefore in condition suitable for patentability.

#### **§102(b) Rejections**

The Examiner rejected claims 1, 2, and 5 – 19 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent Number 5,823,281 of Yamaguchi (“Yamaguchi”). Particularly, the Examiner asserts that “Yamaguchi et al. teaches the structural features and method for controlling the speed of an engine within a hybrid vehicle”.

The Applicant’s undersigned attorney, however, asserts that Yamaguchi does not disclose or suggest all of the limitations of claims 1, 2, and 5 – 19 and therefore the pending Application is in condition for allowance. While Yamaguchi discloses a clutch assembly (C), this clutch is not effective to selectively augment the reaction torque as claimed in independent claims 1 and 8

and frictionally engage the rotor to lower the speed of the engine.

As discussed in the Sumi response above, claims 1 and 8 include the limitation that the clutch assembly asserts **additional** torque to supplement the torque provided by the generator. Yamaguchi, however, discloses that the clutch (C) acts to positively “lock” and “unlock” the gear assembly 13. This permits the generator to rotate at substantially the same speed as the engine when “locked” and at a different speed (through gear reduction by gear assembly 13) when “unlocked”. The clutch of Yamaguchi effectively acts in a similar manner as Sumi in that it creates a direct coupling between the engine and the generator, but does not provide additional torque to reduce engine speed. For these reasons and the reasons discussed above in the Sumi response, the Applicant asserts that Yamaguchi does not anticipate claims 1 – 13 as these claims include the novel and important limitation of including a clutch assembly which provides additional torque to the generator in order to control the speed of an engine.

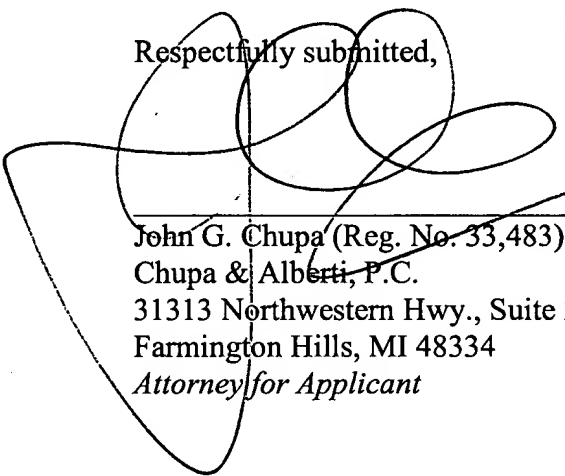
Claim 14 and claims 15 – 19 which depend from it also include steps which are not disclosed or suggested by Yamaguchi. Namely, the step of “selectively and frictionally engaging said rotor assembly effective to further lower [the] speed of [the] engine.” (emphasis added). Yamaguchi merely discloses that when acceleration is desired the clutch is engaged or turned “on” and the gear unit 13 is locked to permit the output shaft substantially rotate at the same speed as the engine. (See Yamaguchi, Figure 9 and column 12, lines 51 – 54, 62 – 66). Furthermore, Yamaguchi specifically disengages the clutch when engine speed is being reduced by the generator. (See Yamaguchi, column 13, lines 47 – 61). By disengaging the clutch when engine speed is being reduced Yamaguchi does not and cannot include the step of frictionally engaging the rotor to further lower the speed of the engine.

For these reasons, it is respectfully asserted that claims 1, 2, and 5 – 19 are not

anticipated by Yamaguchi and are therefore in condition suitable for allowance.

For all of the above stated reasons, the Applicant's undersigned attorney respectfully asserts that all of the rejected claims 1 - 19 are patentable over the prior art of record. Such allowance is respectfully requested. If the Examiner has any further questions regarding this matter, she is invited to call Applicant's undersigned attorney at (248) 865-9588.

Respectfully submitted,



John G. Chupa (Reg. No. 33,483)  
Chupa & Alberti, P.C.  
31313 Northwestern Hwy., Suite 205  
Farmington Hills, MI 48334  
*Attorney for Applicant*

**CERTIFICATE OF MAILING UNDER 37 C.F.R. 1.8**

I hereby certify that the foregoing Response to Office Action is being deposited with the United States Postal Service in an envelope as First Class Mail addressed to the Assistant Commissioner for Patents and Trademarks, Washington, DC 20231 on this 22 day of June 2001.

By: 

Natalya DeVries

For:

CHUPA & ALBERTI, P.C.

31313 Northwestern Highway

Suite 205

Farmington Hills, MI 48334